GEOGRAPHIC NEWS BULLETINS

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HEAD-WORK MOVES PIANOS IN PERNAMBUCO

Any wabbling here would mean disaster. But the piano squad marches with military precision, a seventh man walking ahead to clear a path through traffic and to give orders at turnings (See Bulletin No. 4).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Armistice Day, St. Nazaire and "The Big Parade"

ARMISTICE DAY, when we pay silent tribute to those who gave their lives in the greatest war in history, recalls the fields of France and other scenes associated with the conflict which ended thirteen years ago next Wednesday.

Most familiar of all parts of France to American doughboys is St. Nazaire, the Brittany port at the mouth of the River Loire. Here, on June 26, 1917, the first Yankee soldier set foot directly on the soil of France. A few earlier units came through Liverpool, England, but St. Nazaire will always be associated, in the minds of a million American troops who poured through it early in the war, with the beginning of "the big parade."

France's Chief Shipyard

To the French St. Nazaire is better known for its shipbuilding activities than for its historical or sentimental associations. Situated at the mouth of the Loire, the longest river in France, near important deposits of iron ore, St. Nazaire has developed steel mills and shipyards on a larger scale than any other place in France, and the estuary of the Loire has become the French Clyde. Here in recent years was launched the *Ile de France*, the largest French liner, and many other great transatlantic ships.

St. Nazaire itself is a comparatively new city. In 1856 it had a population of only three thousand. Since then it has grown tenfold; its port and straight streets are well laid out; but it lacks the picturesqueness of many older French communities.

During the war the citizens of St. Nazaire changed the name of their main street from Boulevard d'Océan to Boulevard Président Wilson. June 26, 1926, nine years after the landing of the first Americans, a bronze monument was erected along the ocean shore at St. Nazaire to commemorate the event. On a rocky pedestal, which is awash at high tide, rises a heroic figure of an American soldier, standing on an eagle with outstretched wings. The soldier faces France, and, when the waves are high, he seems to be emerging from the foam.

Many Familiar Names

St. Nazaire became the most important American base overseas because the roads and railways leading from it to Paris and the front needed only a few improvements to make them usable. The Channel ports, it was obvious, could not take care of the 2,000,000 men and the supplies which America was ready to send. Calais, Boulogne, le Havre, and Dieppe were all overloaded with the enormous transport of troops and material for the British army.

Between St. Nazaire and Nantes, its larger and older neighbor up the Loire, American and French engineers accordingly began the development of a great port project. Inland, at Savenay, beyond the marshes, the great base hospital of the A. E. F. was built. Montoir was chosen for the camp of the negro troops and the huge warehouses of the service of supplies. St. Nazaire, Nantes and Paimboeuf, once considered three isolated shipping centers, became "the ports of the Loire," a sense of common interest replacing the rivalry of former times.

St. Nazaire, like many another French port, suffers from the handicap of

© *Photograph by Crété*

INTERESTED SPECTATORS WATCH AN OUTDOOR GAME OF SKITTLES AT FINISTÈRE, BRITTANY

Though the "alley" here is crudely hollowed out in the earth, Breton skittles is related to our American tenpins and "ducks." The game is ordinarily played with nine pins set in a square upon a wooden frame, one angle of which is toward the player, who endeavors to knock down as many of the pins as possible in a throw. The wooden shoes are called sabots in Brittany (See Bulletin No. 1).

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Savannah, Home of the First American Sunday School

A CHURCH convention meeting a short time ago in Atlanta made a pilgrimage to Savannah, home of the first American Sunday School, established there when John Wesley visited the United States two hundred years ago.

Savannah, Georgia's second city and principal seaport, is described by Ralph A. Graves in the following communication to the Washington, D. C., headquarters of the National Geographic Society:

Port of First Transatlantic Liner

"Savannah is steeped in tradition, and historical association is the visitor's companion wherever he goes. Here he finds two monuments, the cornerstones of which were laid by Lafayette, one commemorating the Revolutionary hero, General Nathanael Greene, and the other that gallant Polish friend of liberty, Count Casimir Pulaski, who lost his life at the siege of the city in 1779.

"Hard by is a third monument to William Jasper, the hero whose daring exploit in replacing the fallen colors of the Revolutionary forces at Fort Moultrie in the face of a galling fire has thrilled every American schoolboy. Jasper fell at Savannah with Pulaski in the siege of '79.

"It was from this flourishing seaport, 112 years ago, that the *Savannah* made the first successful transatlantic voyage in the history of steamship navigation, the passage to Liverpool requiring twenty-five days.

End of March to Sea

"Three venerable structures in the heart of the Forest City, so named because of the massive, moss-festooned live oaks which line its streets, attract the attention of the historically minded—the Savannah Theater, one of the oldest playhouses in America, in which practically all the stage stars in the more than a century of its existence have appeared; Christ Church, on the site of the original edifice where John Wesley, founder of Methodism, was once a rector and where he is supposed to have established a Sunday School (still in existence) some fifty years before Robert Raikes started his 'first Sunday School in the world' at Gloucester, England; and the third a mellow old house, now the home of a venerable Savannah jurist, in which General Sherman established his headquarters after he had completed his 'march to the sea.'

"While Savannah derives much of its delightful atmosphere from such associations, there is another side to the city which is equally arresting. It is the world's greatest naval stores market and its miles of waterfront accommodate shipping from all parts of the globe, especially vessels which come for cargoes of cotton, turpentine, and rosin.

"There is also a manufacturing side to this, the oldest city in the State. One of the most interesting of its industrial establishments is a sugar refinery.

Testing Raw Sugar

"The raw sugar comes in shiploads direct from the cane mills of Cuba to the docks of the refinery, where each 325-pound bag is tested for its sucrose, or sweetness, content by three inspectors—one who represents the United States Government and determines the amount of duty to be paid, another the sugar planter in Cuba, and a third the refinery.

"The cargo comes sacked in burlap, and to the amazement of the stranger, there are no 'use no hooks' signs. Jagged holes are snagged in almost every bag as

having been conceived on too small a scale. Originally intended as a coaling station for small ships from French West Indian and South American ports, it leaped overnight during the war into the position of the chief port of entry for hundreds of thousands of men, and tons of munitions and supplies. American engineers improved St. Nazaire, and many of their ideas are being carried to effective completion by the French.

While the lower Loire, drab and colorless, is not a tourist river, the beaches northward from St. Nazaire are among the finest on the Atlantic coast of Europe. Enthusiastic French lovers of nature and bathing have termed this strand "la Côte d'Amour."

Note: France, its hallowed battle fields, and quaint ports and byways are described in "Armistice Day and the American Battle Fields," and "The Battle Fields of France Eleven Years After," *National Geographic Magazine*, November, 1929; "Château Land—France's Pageant on the Loire," October, 1930; "St. Malo, Ancient City of Corsairs," and "Blue Seas and Brilliant Costumes along the Brittany Coast," August, 1929; "Across the Midi in a Canoe," and "In Smiling Alsace," August, 1927; and "Rural Scenes in Brittany," July, 1923.

© Photograph by Crété

MAYBE PULLMAN'S IDEA CAME FROM BRITTANY

Both upper and lower berths in this Breton cottage are snug and secure against the cruel gales that whip this most westernly part of France in winter. The girl poised on the shelf giving access to the upper berth wears the characteristic, quaint white bonnet of this region.

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The Oyster Season Opens in the World's Greatest Oyster Grounds

IN THE fall, men's palates turn to oysters. And to cater to these palates, the Chesapeake Bay oyster grounds are to-day resounding with the clank of oyster tongs and the shuffle of thousands of bushels of oyster shells.

Thirty-five countries have oyster fisheries. Upwards of 20,000,000 bushels of oysters are produced in the world annually. About four-fifths of them are dredged from American waters while France, Japan and China account for the greater part of the remaining one-fifth.

Sail the coastal waters of the United States, and you will meet oyster fishermen off the coasts of every State except two—New Hampshire and Maine. In fifteen of the coast States the oyster is the chief fishery product. But Chesapeake Bay remains the world's greatest oyster ground.

Few Oysters Reach Adult Age

If Nature nurtured every young oyster to adulthood, in a few years Chesapeake Bay and other waters in which oysters thrive would be crowded out of their beds by the bivalves. An adult oyster produces millions of young but only a tiny fraction of this number reach dinner table size.

For a few days after birth the young, which are invisible to the naked eye, weakly swim about with the tides and currents. Fish and mollusks which strain their food from water as it passes through their gills devour millions of the helpless infants. Adult oysters, even, thus make away with large numbers of the little creatures. At this stage the young are called spat. Several days after birth the spat fall to the sea floor. Large numbers settle on mud and soft sand and are lost. Those that attach themselves to hard, clean objects are saved.

American oystermen literally lay a floor of oyster shells on their grounds to catch the falling spat. One shell will accommodate hundreds of young oysters. Chinese and Japanese oystermen prefer using tree branches to catch the spat, and at low tide a Japanese oyster "nursery" resembles a forest of barnacle-covered trees.

Stones are strewn about oyster grounds in Australia, New Zealand and also in China, while the Dutch and French submerge tiles. Lost running lights of ships and bottles, covered with young oysters, have been dredged from oyster grounds. When their shells have developed, the young bivalves are transplanted in deeper water to grow and fatten for two to three years, when they are ready for market.

Natural Enemies Cut Oyster Supply

Nature gave the oyster a hard shell for protection, but did not give the bivalve legs or swimming apparatus to escape all of its enemies. Schools of black drum fish swoop down upon beds, crushing thousands of bushels of adult oysters in their powerful teeth and devouring them. On the Pacific coast a species of the stingray makes similar inroads upon oyster beds.

In Long Island Sound starfish clamp themselves over the mouths of adult oysters and doggedly cling on until the oysters' muscles relax from fatigue. Then the tenacled attackers insert their stomachs between the shells and swallow the helpless creatures at their leisure.

Enemies also bore through oyster shells and suck the tender part of the organ-

it is lifted from the hold of the vessel and the long, augur-like instruments of the testers make other punctures. But the unrefined brown sugar is damp and little of it spills.

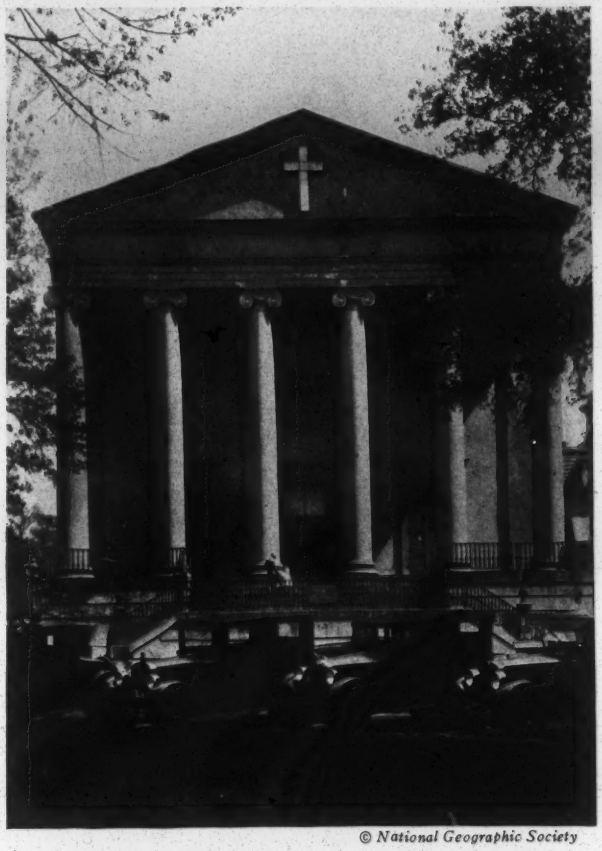
"The raw sugar is first freed of surplus moisture in centrifugal cylinders, then it is reduced to a syrup which is filtered through big tanks, each containing thirty tons or more of bone black which removes the yellowish color. Formerly dried ox blood was used as the filtering substance. The liquid is next boiled in semi-vacuum containers to prevent scorching.

"When crystals begin to form in the rich syrup, the thinner syrups are drawn off for further treatment. Sometimes a syrup may be sent through the crystallizing process as many as ninety times, in order to extract every available crystal.

"The sugar is washed, then dried in hot-air blowers and is ready to be automatically weighed and poured into containers—in cartons, in 2, 5, 10, 25, 50 and 100-pound sacks, and in barrels.

"From the time raw sugar is dumped into the hopper until it is delivered to the consumer it has not come in contact with the hands of any one of the 400 employees of this plant."

Bulletin No. 2, November 9, 1931.



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ON THIS SITE THE FIRST SUNDAY SCHOOL WAS HELD

Christ Church, Savannah, stands to-day where John Wesley, founder of Methodism, was the third minister of the first church erected in Savannah by Oglethorpe's colonists. Here he established the first American Sunday School.

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Pernambuco, Most Easterly City in the Western Hemisphere

WHILE the rest of the world seeks ways and means of bringing about armament reduction the city of Pernambuco, Brazil, asks for bigger and better guns. A petition to the Minister of War at Rio de Janeiro says nothing, however, about national defense. The Pernambuco argument points out that the city, situated as it is at the extreme eastern point of Brazil, naturally must receive foreign warships and notables first, and fire the 21-gun salute expected by international courtesy. Old Fort Brum, at the entrance of the harbor, lacks both men and guns, and public-spirited citizens of Pernambuco contend the national government should do something about it.

Canals and Bridges Recall Dutch Founders

Pernambuco (also known as Recife), the farthest east city of the Western Hemisphere, is described in a communication from Frederick Simpich, in charge of a recent National Geographic Society survey party which explored American air lanes from Washington, D. C., to Buenos Aires.

"This is a Dutch-like city," writes Mr. Simpich. "Prinz Mortiz van Nassau came here in 1637, when the Dutch ruled, along with many artists, scientists, writers, naturalists and architects, to build an idealized Holland city in South America. Few original Dutch edifices remain; but there is something in the canals, deep-shaded streets and many bridges that reminds one of Holland, or of old-fashioned Bremen, Germany.

"In the museum is a vast canvas, depicting the fights between Portuguese and Dutch, for possession of Recife; a fine old map, drawn by the Dutch 300 years ago, showing Recife then; leg and arm chains, and a whip for slaves; ornate palanquins of dead and gone bishops and governors; a beautiful bronze cannon dated 1629, embossed with a fine three-masted Dutch ship, from the days of Henry Hudson; square gold coins, minted here by the Dutch about the time the Pilgrims were getting set up in New England; an old Dutch Fort, still in military use after three centuries—where the amiable Brazilian captain served us coffee; many reminders of Portuguese discovery and settlement.

Street Cars Deliver Fresh Meat

"But we stick to the streets, for our time is short. Here comes a string of burros dragging 20-foot palm fronds, to thatch a hut of the poor. 'Mucambo,' such a hut is called—a word brought straight here from black Africa. And then a street car—Americans built the line—with a trailer full of fresh meat; that's the way meat is delivered to butcher shops here.

"Near the coast are many artificial lakes, or ponds, tied to the sea with a ditch in which swings a little wicker gate, or trap. At high tide, small fish come in, and get caught. Thus confined, they are raised for food, just as pigs and chickens are fattened in pens. 'Viveiros,' these fish pens are called.

"Crowds of women in a bookstore buy American fashion magazines, and those that show how to build and furnish modest homes. Few can read English; yet the pictures interest them and you note American influence on dress and house furnishings. 'Movies,' too, influence dress and diversions here. But football and horse-racing predominate.

"On Rua Bom Jesus, a waterfront street, you see sailors from the seven seas. A man bears a sloth on a pole—a big, fat hairy thing, with a small silly face, its eyes,

isms through the holes; while mussels, barnacles, and sponges sometimes adhere so densely to oyster shells that the bivalves are literally suffocated or starved.

Oysters from the eastern coast of the United States have been shipped to western markets since improvement in refrigerating technique has made it possible to preserve them in a fresh state. The Pacific coast oyster is small; several dozen oysters are not considered too large a "portion" for one person. They are seldom served on the half shell.

The oyster was a popular food in Italy a century before the Christian era but Chinese oystermen were probably dredging the sea bottom for the bivalves at a remoter period. Although scientific oyster culture is in its infancy, the oyster now is America's most extensively cultivated aquatic animal.

Note: See also "A Maryland Pilgrimage," by Dr. Gilbert Grosvenor, in the February, 1927, issue of the *National Geographic Magazine*. Supplementary reading will be found in "Coasting through the Bay State," September, 1931; and "Approaching Washington by Tidewater Potomac," March, 1930. See also "The Book of Fishes," by Dr. John Oliver La Gorce, published by the National Geographic Society. A list of The Society's book, map and pictorial publications will be sent teachers upon request.

Bulletin No. 3, November 9, 1931.

© Photograph from Dr. Hugh M. Smith

OYSTERS GROWING ON AN OLD LANTERN

The tendency of the oyster to attach itself to any convenient object has been utilized by the oyster culturist from time immemorial. The Romans cultivated the oyster, particularly at Lake Avernus, and their method of culture is still practiced to-day.

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Silver, "Old Timer" in Coinage Metals

SILVER, a metal of many uses, has for 2,000 years been employed for coinage more than for any other purpose.

When Abraham paid in silver for a grave for his wife 4,000 years ago, one of the first payments in silver was recorded. The early use of silver as money was in the form of ingots. Seven hundred years before the Christian era, the Lydians struck off the first coin containing silver. It was an alloy of gold and silver.

Silver coins were minted in Britain in 150 B. C. The Britons filed, clipped and otherwise mutilated the coins and attempted to exchange them at face value. The practice was so general that Henry I passed a law whereby the mutilators lost a hand as a penalty.

Silver succeeded copper as the dominant money metal about two centuries before Caesar's time. The Romans explored their domains for copper and flooded the market with the metal. When the Roman matron had to load a donkey with copper to buy sufficient food for a feast day, leaders of finance sought a scarcer metal. Thus began silver's 2,000-year career in the money world.

The United States dollar got its name from the original silver dollar struck off in Joachimsthal, a Bohemian village, in the sixteenth century. The owner of the mine from which the silver was taken named the coin a "Joachimsthaler." The Germans called the coin a "thaler," while the Dutch abbreviation was "daler." When the coins reached England the broad "a" was discarded for an "o" and another "l" added to make the coin a "dollar."

Mexico Leads in Silver Production

Columbus did not know that he had discovered the world's greatest silver-producing region. Less than thirty years after he sighted land, an expedition landed at Vera Cruz under the command of Cortes and penetrated Mexico. It found natives literally burdened with articles of silver. This was the first European contact with silver of the Western Hemisphere.

To-day the Americas produce more than 80 per cent of the world's supply of silver, with Mexican mines giving up about two-fifths of the world's supply. The mines of the United States account for about 25 per cent, although the sinking of the price of silver in recent years has stifled the silver mining industry. Peru, Germany, India and Japan are the leading sources of silver in their respective continents. Utah is the ranking silver State of the United States.

Colonial America used Spanish pieces of eight as well as British silver coins. In 1794, the mint struck off the first United States silver coins—half dimes, half dollars and dollars. Two years later the silver dime and quarter appeared. From 1873 to 1887 a trade silver dollar for use in China was struck off, and from 1851 to 1873 appeared a silver three-cent piece.

Silver Jewelry as a "Thrift Account"

Orientals have developed a genuine affection for silver. The metal is so malleable that it easily can be worked by artisans. It can be beaten to a thinness of one one-hundred-thousandth of an inch. Until 1893 Indians could exchange silver for rupees at the Indian Mint. In prosperous years excess money of the peasants was used to purchase silver which they fashioned into jewelry for the feminine members

nose and mouth all squeezed together; it has three long horny toes on each foot. 'How much?' you ask. 'Twenty milreis.' Cheap enough, you first think; then again, would a live sloth not be dear at any price?

"Here is an old man with white, curly head and the beard of a prophet. He is a broken Portuguese actor. He is selling his own photograph and telling of past stage triumphs when he 'played 200 nights in Paris.' Sailors, amused, give him a ragged five-milreis note and pass into the 'English Ship Chandlers' Cafe' where red-necked mates and white-clad skippers sip ale, their long mustaches, like bicycle handle-bars, dripping with cool froth.

"Bird peddlers hang about the open door, and a vegetarian Hindu comes vainly trying to sell his book; what English sailor man would quit soup, fish and roast beef for a life-time diet of squash and string beans?

"Long lines of ships discharge, about 150 a month. You see heavy machinery from America—pumps, forges, motors, busses, plows, gas engines—but railway locomotives come from England. Along the waterfront, like the bund in Shanghai, rise the banks, consulates, and concrete-steel head offices of merchant traders, insurance brokers, and sugar planters."

Note: The little-known country on each side of Brazil's eastern "shoulder" is described and illustrated in "Skypaths through Latin America," *National Geographic Magazine*, January, 1931; "Gigantic Brazil and Its Glittering Capital," December, 1930, and other articles under the heading "Brazil," which may be found by consulting the Cumulative Index of *The Magazine* in your school or local library.

Bulletin No. 4, November 9, 1931.

© *Photograph by Capt. A. W. Stevens*

PERNAMBUCO IS DIVIDED BY LAGOONS AND WATERWAYS

Like the Amsterdam of its early founders this Brazilian metropolis of 400,000 people lives much of its life on its canals. The magnificent sea wall shown here is built along the top of a natural ledge which parallels the beach at varying distances from shore.

of their families. In lean years the silver objects were exchanged for rupees at the Mint to keep "the wolf from the door."

Although the Mint discontinued the exchange, the Indians' affections for silver has not waned. Indian brides still are ashamed to face the public without silver adornments. The silver market in China and India booms when crops are good and many marriages take place.

A native's financial standing is based in part upon his accumulation of silver. Much of the gold lace worn by Indians is often silver with a thin plating of gold. Camels, elephants, and bullocks of the Orient are "all dressed up" for a royal parade when they fare forth in silver trappings.

Note: See also "The Geography of Money," *National Geographic Magazine*, December, 1927.

© *Photograph from L. G. Popoff*

THIS BULGARIAN LADY'S FACE IS HER FORTUNE

In certain villages of Bulgaria a girl is decorated like this for her wedding. First a thick wreath of flowers is placed about her head, and then across it silver coins, her dowry, are draped in the grotesque fashion shown above.